

Remarks/Arguments

Reconsideration of this application is requested.

Claim Status

Claims 3, 4, 21 and 22 were presented. Claims 3, 21 and 22 are amended, and claim 23 is added. Thus, claims 3, 4 and 21-23 are now pending.

Claim Rejections – 35 USC 103

Claims 3, 4, 21 and 22 are rejected under 35 USC 103(a) as obvious over Okumura (US 5,700,593) in view of Takayama (US 6,349,008). In response, independent claim 3 is amended to clearly distinguish over Okumura and Takayama. In particular, claim 3 is amended to recite:

...a larger number of sputtered particles having direction components along tangents of circles coaxial to the substrate are made incident on the substrate than sputtered particles not having direction components along tangents of circles coaxial to the substrate, so that magnetic anisotropy to the magnetic recording layer is allowed where coercive force is higher when magnetized along tangent directions than when magnetized along radius directions of the substrate...

This amendment clarifies that the direction control during sputter deposition of the anisotropy-allowing layer requires that a larger number of sputtered particles having direction components along tangents of circles coaxial to the substrate are made incident on the substrate than sputtered particles not having direction components along tangents of circles coaxial to the substrate. Consequently, the magnetic anisotropy to the magnetic recording layer is allowed where coercive force is higher when magnetized along tangent directions than when magnetized along radius directions of the substrate.

The Action asserts that Takayama discloses an oblique sputter deposition method. However, Takayama does not disclose or suggest the direction control recited in amended claim 3. Takayama describes an oblique sputter deposition

method in Fig. 2 and at col. 4, line 41 to col. 5, line 14. A circular aperture 300 is provided between a circular target 400 and a circular substrate 111. Takayama states:

“...the components which were flown in the direction of the radius of the substrate 11 from a sputter particle high-density generating region 401 concentrically existing on the surface of the target 400 were made to deposit.”
(Takayama, col. 4, lns. 51-54);

and

“...the c-axis was inclined with respect to a direction perpendicular to the film surface to the direction of the radius thereof.” (column 4, lines 63-65).

From this description and referring to Fig.2, it is apparent that substrate 111 is placed concentrically to target 400 and that Takayama's oblique sputter deposition method makes a large number of sputter particles having a direction component along the radius of the substrate incident on the substrate. As pointed out by the Action, the effect of Takayama's method is to improve the reproduced output/medium noise ratio, linear recording density and track density (column 9, lines 54-57). The object and effect of applicant's invention, by contrast, is to improve coercive force magnetic anisotropy for magnetization sustainability. Consistent with this object, amended claim 3 makes a larger number of sputtered particles having direction components along tangents of circles coaxial to the substrate incident on the substrate.

Accordingly, even if the oblique sputter deposition method of Takayama is applied to Okumura, the result still does not correspond to the invention of amended claim 3. Therefore, claim 3 and claims 4, 21 and 22 dependent thereon are not rendered obvious by Okumura in view of Takayama. The rejections under 35 USC 103(a) should be withdrawn.

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Dependent claim 21 is amended to be consistent with the amendments to claim 3. Claim 22 is amended to clarify the locations of the target and the substrate

New Claim

Claim 23 is added to further define the invention and claims a direction control board for screening the sputtered particles.

Conclusion

This application is now in condition for allowance. The examiner is invited to telephone the undersigned to resolve any issues that remain after entry of this amendment. Any fees due with this response may be charged to our Deposit Account No. 50-1314.

Respectfully submitted,
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